

NEW ENGLAND NOTE

WOODY *ARISTOLOCHIA* SPECIES IN WESTERN
MASSACHUSETTS

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Two woody pipevine (*Aristolochia*) species native to the southeastern and south central United States have been reported in Massachusetts. *Aristolochia tomentosa* Sims was first observed by Roberta Poland in 1957 in the vicinity of old cellar holes along the Connecticut River in Deerfield, Franklin County, and by 1983 was fully naturalized and spreading at this site (Burk 1984). A second, smaller colony of *A. tomentosa* was established by 1982 along a road edge in the Mount Tom State Reservation, Hampden County (Burk 1984). The origin of the Mount Tom population is unknown.

Aristolochia macrophylla Lam. was reported by Pfeifer (1966) from Essex County in the northeast corner of the state; whether *A. macrophylla* was naturalized at this site is uncertain, although Pfeifer noted that both *A. macrophylla* and *A. tomentosa* “may be grown in temperate gardens, chiefly as arbor or trellis subjects.” *Aristolochia macrophylla* is widely used in western Massachusetts as a screening vine, particularly on fences and verandas of wooden frame houses built in the late 19th century. Despite the highly specialized pollination syndromes in some members of the genus (Judd et al. 1999), observations in the Northampton, Massachusetts, area over a number of years indicate that *A. macrophylla* flowers and sets fruit freely in cultivation. Although single rampant pipevines may occasionally spread from fences or trellises onto nearby shrubs and trees, they do not usually escape and become naturalized in adjacent, seemingly suitable habitats such as overgrown vacant lots and wooded edges.

However, in October, 1997, a stand of *Aristolochia macrophylla* was encountered at the edge of moist hardwood forest in

Amherst, Hampshire County, by Tad Zebryk (*Zebryk 4273 MASS*). The Zebryk specimen apparently represents the first vouchered collection of *A. macrophylla* identified as naturalized in Massachusetts (Sorrie and Somers 1999). The plants occur at the intersection of Pine and State Streets in association with *Quercus rubra* L., *Q. velutina* Lam., *Fagus grandifolia* Ehrh., and *Fraxinus americana* L. On September 28, 1999, this population consisted of two groups of vines. One of these extended approximately 8 m along the north side of State Street, scrambling from the road edge over a cable railing and back an equal distance into the woodland. The group near the intersection with Pine Street contained fruiting vines that had climbed 7 m or more into a mature *Q. velutina* support tree. Tad Zebryk also observed a presumably naturalized population of *A. macrophylla* as early as 1994 in East Longmeadow, Hampden County. This population, which has since been extirpated, occurred with *Acer rubrum* L., *Betula populifolia* Marshall, *Rhus typhina* L., and *Rosa multiflora* Thunb. in early successional scrub near the remains of a former home site associated with an abandoned farm off Shaker Road.

Two additional naturalized populations of *Aristolochia macrophylla* have since been observed by C. J. Burk, one in Hampshire County and the other in Franklin County. During the summer of 1998, several widely spreading vines of *A. macrophylla* were seen in a strip of disturbed woody vegetation between Mass. Rt. 9 and the Mill River, 1.25 mi. (2.0 km) south of the center of Williamsburg, Hampshire County. Supporting trees included *Acer saccharum* Marshall, *Prunus serotina* Ehrh., *Quercus rubra*, and *Rhus typhina*. Individual stems of *A. macrophylla* extended 8 to 10 m up some support trees, and many of the tops and major vine-bearing branches of the support trees were observed to be severely bent or broken, either from the weight of the vines or winter storms or both. Entangled with the twining stems of *Celastrus orbiculata* Thunb., the vines formed four more or less distinct clumps of stems with two additional clusters 8 m distant to the north. Associated species included a dense stand of *Equisetum hyemale* L. beneath the larger group of vines, and abundant *Polygonum cuspidatum* Siebold & Zucc., near the northern cluster. The pipevines produced numerous fruits which had begun to split and release seeds by October 19, 1998; however no seedlings of *A. macrophylla* were evident in the vicinity. The site was re-examined on June 8, 1999, when the vines were flowering abun-

dantly. Since the initiation of growth in early spring, the vines had invaded a strip of vegetation which had been recently cleared during the course of road construction along Route 9.

A naturalized population of *Aristolochia macrophylla* was also observed by C. J. Burk in October, 1999, along Montague City Road, 55 m northwest of the intersection of Rastallis Street, in Montague, Franklin County. The vines occurred for a distance of 9 m along the roadside and extended from a recently mowed grassy strip into at least six support trees (three stems of *Rhus typhina*, two of *Fraxinus pennsylvanica* Marshall, and one of *Acer saccharum*) on an embankment abutting lowland forest. A residential neighborhood where *A. macrophylla* was grown as a garden ornamental was situated opposite the site along Montague City Road; the proximity of cultivated pipevines and the persistence of a clump of a *Hosta* cultivar at the site itself suggest that naturalized plants of *A. macrophylla* may have originated there from garden refuse, as woody pipevines propagate readily from ripened seed, softwood cuttings, root cuttings, and divisions (Wyman 1977). None of the naturalized vines seemed to have produced fruit in 1999. Specimens of *A. macrophylla* from the Williamsburg and Montague sites have been deposited in SCHN (Burk 98001, 99001).

To assess earlier predictions that *Aristolochia tomentosa* and *A. macrophylla* might be expected to spread in the region (Burk 1984), both known Massachusetts populations of *A. tomentosa* were revisited in 1998 and 1999. In 1983, the Deerfield population extended approximately 40 m along McClellan Farm Road on the west bank of the Connecticut River, overrunning woody vegetation from the road edge 15 m or more east past a group of old cellar holes to a ravine leading down to the Connecticut River (Burk 1984). By summer, 1999, the population had expanded south along McClellan Farm Road an additional 28 m. Seedlings of *A. tomentosa* also occurred in the herb stratum of floodplain forest on an upper terrace between the cellar holes and the river, with a few vines ascending support trees to the forest canopy. In the interval since 1983, both *Celastrus orbiculata* and *Polygonum cuspidatum*, invasive non-native species common in other Massachusetts floodplain forests (Kearsley 1999), had also become prominent at the Deerfield site.

Aristolochia tomentosa also persisted in the Mount Tom State Reservation through 1999, although clearing and cutting back of

vegetation along the road since the early 1980s has removed or reduced its principal supports. In September, 1998, the vines formed a loose ground cover for a distance of about 5 m along the road edge, extending back 3 m into adjacent forest. By late August, 1999, the colony had been reduced in size, largely by mowing and possibly by herbicide treatment along the road edge.

All extant populations of both *Aristolochia macrophylla* and *A. tomentosa* occur along wooded road edges adjacent to forested tracts; all but one are adjacent to stream banks. Unlike *Celastrus orbiculata*, the pipevines apparently do not strangle their support trees. However, because of their vigorous growth and apparent tendency to overrun and smother native woody vegetation at these Massachusetts sites, the status of both woody pipevine species should continue to be monitored.

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